

## DEVICE AND KIT FOR VISUALISING A CUTTING REGIME OF A DIAMOND, AND A METHOD FOR DETERMINING A CUTTING REGIME

### BACKGROUND TO THE INVENTION

- 5 Diamonds are formed in the earth's crust under extreme conditions of pressure and temperature. Rough diamond crystals can take millions of years to form. Rough diamonds reach the earth's surface by volcanic eruptions and can be found in volcanic pipes or alluvial depositions (rivers and seas) from where they are mined.
- 10 A large proportion of the diamonds found are of industrial quality. They cannot be used as gemstones because they are full of impurities and cracks. Because of the hardness of diamond they are still useful for industrial cutting and drilling tools.
- 15 A smaller fraction of the rough diamonds found are of gem stone quality. These stones are cut and polished to be used for precious jewelry or other luxury goods. There is a market for polished diamonds, because of their value and brilliant appearance.

It is clear that the rarity of gem stone quality rough diamonds make them precious. It is the task of a good cutter to cut and polish a rough stone in such a way that the loss of material is minimal and the polished result has the highest possible value.

- The value of a polished diamond is determined by four factors, called the 4 C's namely carat, clarity, colour and cut. Each of these factors are judged in a certificate.
- 25 **Cut:** A good cut gives a diamond its brilliance, that is the brightness which seems to come from the very heart of a diamond. The angles and finish of any diamond are what determine its ability to handle light, which leads to brilliance. The quality of the "cut" does make a difference in how a diamond looks.
- 30 **Clarity:** Most diamonds contain some inner flaws, or inclusions, that occur during the formation process. The visibility, number and size of these inclusions determine what is called the clarity of a diamond. Diamonds that are clear create more brilliance, and thus are more